99B-189

4.5 PSP Cover Sheet (Attach to the front of each proposal)

Proposal Title: Inundation of a Section of the Yolo Bypass to Restore Sacramen Splittail and to Support a Suite of Other Anadromous and Native Species in Dry Years

Applicant Name: Contract Applicant: Natural Heritage Institute (NHI)

Mailing Address: 114 Sansome St, Suite 1200, San Francisco, CA 94104

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Email: jcain@n-h-i.org

Amount of funding requested: $ 820,679 for 1 years

Indicate the Topic for which you are applying (check only one box).

- ☐ Fish Passage/Fish Screens
- ☒ Habitat Restoration
- ☐ Local Watershed Stewardship
- ☐ Water Quality
- ☐ Introduced Species
- ☐ Fish Management/Hatchery
- ☐ Environmental Education

Does the proposal address a specified Focused Action? ✓ yes _____ no

What county or counties is the project located in? Yolo and Solano counties

Indicate the geographic area of your proposal (check only one box):

- ☐ Sacramento River Mainstem
- ☐ Sacramento Trib: _____
- ☐ San Joaquin River Mainstem
- ☐ San Joaquin Trib: _____
- ☒ Delta: _____
- ☐ East Side Trib: _____
- ☐ Suisun Marsh and Bay
- ☐ North Bay/South Bay: _____
- ☐ Landscape (entire Bay-Delta watershed)
- ☐ Other: _____

Indicate the primary species which the proposal addresses (check all that apply):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- ☐ Winter-run chinook salmon
- ☐ Late-fall run chinook salmon
- ☐ Delta smelt
- ☒ Splittail
- ☐ Green sturgeon
- ☐ Migratory birds
- ☐ Other: _____
- ☐ Spring-run chinook salmon
- ☐ Fall-run chinook salmon
- ☐ Longfin smelt
- ☐ Steelhead trout
- ☐ Striped bass
- ☐ All chinook species
- ☒ All anadromous salmonids

Specify the ERP strategic objective and target (s) that the project addresses. Include page numbers from January 1999 version of ERP Volume I and II:

Inundation of flood plains, pg. 89

Restore the Sacramento splittail, pg. 208

Bay-Delta Aquatic Foodweb, pg. 100

Fish passage and stranding, pg. 525

Indicate the type of applicant (check only one box):

☐	State agency	☐	Federal agency
☒	Public/Non-profit joint venture	☐	Non-profit
☐	Local government/district	☐	Private party
☐	University	☐	Other: _____

Indicate the type of project (check only one box):

☒	Planning	☐	Implementation
☐	Monitoring	☐	Education
☐	Research		

By signing below, the applicant declares the following:

1.) The truthfulness of all representations in their proposal;

2.) The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and

3.) The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Gregory A. Thomas, President, NHI
Printed name of applicant

Signature of applicant

I. Title Page

A. Project Title: Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail and to Support a Suite of Other Anadromous and Native Species in Dry Years

B. Primary Contact:

Natural Heritage Institute
Gregory Thomas, President
114 Sansome Street, Suite 1200
San Francisco, CA 94104
Phone: (415) 288-0550, Fax (415) 288-0555
Email: gat@n-h-i.org

C. Co-Applicants:

Yolo Basin Foundation

California Department of Water Resources

Natural Heritage Institute

D. Participants/Collaborators in Implementation:

Jones and Stokes Associates

Northwest Hydraulic Consultants

D. Type of Organization: Non-profit public benefit corporation,
Tax Status: 501(c)3

E. Tax Identification Number: Federal: 94-3099600

II. Executive Summary

A. Project Description

The Yolo Basin Foundation (Foundation), an established organization of local stakeholders with strong ties to and interest in the Yolo Bypass (Bypass), proposes, along with Natural Heritage Institute (NHI) and DWR, to conduct the baseline monitoring, alternatives development and analysis, and design necessary to "expand and enhance seasonal shallow-water habitat in the . . . Yolo Bypass," a key opportunity identified in the CALFED Strategic Plan for Ecosystem Restoration (Strategic Plan) (p. 41).

This project will build on the technical studies and stakeholder process currently being conducted as part of the Foundation's Ecosystem Restoration Strategy for the Bypass project that was funded by CALFED last year (project begins in May 1999). Recent studies suggest that inundation of the Yolo Bypass during wet years has substantial benefits to many native fish species and other organisms of the estuary, including Sacramento splittail (*Pogonichthys macrolepidotus*)and juvenile salmon.

The project applicants will identify, design, and implement the optimal combination of management and infrastructure modifications necessary to seasonally inundate a small portion of the Bypass (5,000 acres) for fish and wildlife during dryer years without impacting water supply for existing water rights holders or compromising existing uses of the Bypass. The project will be carefully designed and implemented as an experimental pilot project intended to inform future restoration actions according to the adaptive management model.

B. Location

The proposed project is located in Yolo County, California (Figure 1). The project will most likely be located along the eastern edge of the Bypass where elevations are lower. The selection of a specific site will depend on the input of stakeholders in the Bypass, including landowners, who will be involved in project analysis and design.

C. Primary Biological/Ecological Objectives

- Expand and improve spawning conditions for Sacramento splittail
- Improve rearing conditions for juvenile salmonids
- Enhance Delta food web productivity
- Reduce stranding and improve passage of native fish
- Enhance spring staging habitat for shorebirds

D. Cost and Schedule

This project will be implemented in the following three phases in conjunction with the Ecosystem Restoration Strategy. **This proposal seeks funding for Phase I only.**

• **Phase I: Baseline monitoring, alternatives analysis, and design**	**1/2000**	**1/2001**	**$820,679**
• Phase II: Environmental compliance and permitting	1/2001	6/2001	$150,000
• Phase III: Construction and operation	6/2001	11/2001	$4,000,000

E. Adverse and Third-Party Impacts

The project will be carefully designed with local stakeholders, landowners, and responsible agencies to avoid any third-party impacts. In particular, the project applicants will coordinate with flood management agencies, water suppliers, and local landowners to ensure that the project does not reduce flood protection, impair water quality, or infringe on agricultural use or private property rights.

F. Applicant Qualifications

The project will be jointly managed by a special private/public partnership comprised of the Foundation, DWR, and NHI. These three entities will serve as the Management Committee. All decisions regarding project scope, budget, deliverables, and implementation of this project will be made by consensus.

The Foundation will represent local stakeholders throughout project design. The Foundation has established credibility within the Bypass community and among the many stakeholders that will help build a consensus design. As project manager of the Ecosystem Restoration Strategy, Foundation's participation provides the key link needed to successfully move from strategy to implementation as envisioned in this proposal.

NHI will serve as the fiscal agent and administrator of the project under the direction of the Management Committee. NHI will participate substantively by identifying biological constraints, developing project design, analyzing legal and institutional constraints posed by land and water rights and regulatory and permitting requirements, and coordinating statewide outreach to CALFED stakeholders.

DWR will lead project monitoring studies and assist in project evaluation and design.

The project team will include facilitators, planners, and scientists from Jones & Stokes Associates. Engineering design and analysis will be done by engineers with Northwest Hydraulic Consultants (NHC). Both organizations have expertise in hydrology and restoration planning in the Bypass.

G. Monitoring and Data Evaluation

The project will be specifically designed to test multiple hypothesis regarding optimal conditions for each of the species, guilds, and processes referenced in the goal statements. DWR staff, in conjunction with the project team and independent and agency scientists, will develop a monitoring study design that will be peer reviewed according to Interagency Ecological Program (IEP) standards. A key part of this phase of the project will be initiation of a preproject monitoring program designed to produce data suitable for agency reports and peer-reviewed scientific journals. Details on the sampling, preservation, and analytical techniques will follow the Yolo Basin Study Plan already developed for IEP.

H. Local Support and Coordination with Other Program

Numerous stakeholders and agencies have interests or jurisdiction in the Bypass. Conducting public outreach to public stakeholders and coordinating with relevant agencies are the required first steps of this project. The public outreach element will be integrated into the Ecosystem Restoration Strategy process. Members of the Yolo Basin Working Group (Working Group) created for that project will be invited to attend bimonthly meetings to refine project goals and objectives, identify opportunities and constraints, evaluate alternative designs, and develop measures for implementing the project goals and objectives. Two technical and informational workshops will be conducted concurrently with the Working Group meetings. Workshop participants will include, but not be limited to, the Working Group, CALFED staff, elected officials, natural resource agencies, natural resource conservancies, academic representatives, agricultural and water user industry representatives, and landowners. These workshops will be in addition to those already identified under the Ecosystem Restoration Strategy and will focus specifically on the details of this pilot project.

I. Compatibility with CALFED Objectives

The Bypass project is consistent with CALFED's ERP objectives.

III. Project Description

A. Proposed Scope of Work

This project will "expand and enhance seasonal shallow-water habitat in the . . . Yolo Bypass," a key opportunity identified in the Strategic Plan (p. 41). The independent scientists who authored the strategic plan identified the bypasses as "*demonstrably productive places for juvenile salmon and splittail,* as well as waterfowl." This project will capitalize on the method advocated by the scientists: "By re-engineering the weirs that release water into the bypasses, the bypasses presumably can be flooded (at least partially) on a more regular basis and could therefore be productive in most years. Habitat creation in flood bypasses presents one of *the best opportunities for ecosystem restoration* because large areas of habitat can probably be created at small cost while retaining the flood management functions of the bypasses" (Strategic Plan, emphasis added).

This project will build on the technical studies and stakeholder involvement process currently being developed for the Foundation's Ecosystem Restoration Strategy project (funded last year by CALFED). However, it will go beyond the scope of that study to identify, design, and implement the optimal combination of management and infrastructure modifications necessary to increase the frequency and duration of seasonal inundation of a small portion of the Bypass for fish and wildlife without negatively impacting existing water and land use in the Bypass. The project proponents will collaborate with vested agencies and local stakeholders to identify a range of alternatives that are both consistent with existing uses of the Bypass and beneficial to land and water users.

This pilot project will be designed and implemented as an experimental pilot project to test the hypothesis that increasing the frequency and duration of seasonal inundation in dry and average hydrologic sequences will contribute significantly to the recovery of Sacramento splittail and other native and anadromous fish species, including juvenile chinook salmon. Unlike most other floodplain sites, the Bypass is an ideal place to test floodplain restoration approaches because fish which seasonally use the Bypass, as well as nutrients, typically enter and leave through two points that are relatively easy to measure and observe; the Bypass can be modified to flood in a predictable and controllable fashion; and the prospect of collaboration with landowners to inundate a section of the floodplain without major structural modifications or water supply impacts is promising.

The project will be implemented in three phases. **This request is for Phase I only.** Phases II and III will be implemented only if the proposed designs are compatible with the larger restoration strategy for the Bypass and are acceptable to local stakeholders.

• **Phase I: Baseline monitoring, alternatives analysis, and design**	**1/2000**	**1/2001**
• Phase II: Environmental compliance and permitting	1/2001	6/2001
• Phase III: Construction and operation	1/2001	11/2001

Task 1: Project Management and Oversight. The project will be jointly managed by a special private/ public partnership between the Foundation, DWR, and NHI. Management responsibilities will focus on finalizing project scope and budget, refining project goals and objectives, administering funds and contracts, selecting alternatives for analysis, and making final decisions regarding project location and implementation. These decisions will be made by consensus, and no decisions under this partnership will be made without the consent of the Foundation which represents local stakeholders.

Deliverable: Four quarterly progress reports, and one final report.

Schedule: All four quarters.

Task 2: Public Outreach and Agency Coordination. Public outreach to the numerous stakeholders and agencies that have interests or jurisdiction in the Bypass is the required first step of this project. The public outreach element will be integrated into the already funded Ecosystem Restoration Strategy process that is expected to be completed in May 2000. Members of the Working Group created for that project will be invited to attend up to six bimonthly meetings to refine project objectives, identify opportunities and constraints, evaluate alternative designs, and develop implementation strategies. In addition to the Working Group meetings, a diverse range of agency and stakeholder representatives, including landowners, agency staff, elected officials, and CALFED stakeholders will be invited to attend two technical and informational workshops focusing specifically on the details of this pilot project.

Deliverable: Six bimonthly public meetings, two public workshops; meeting and workshop minutes and articles in the *Yolo Flyway*, and press releases announcing and describing the meetings.

Schedule: All four quarters.

Task 3: Inventory and Describe Existing Information, Conditions, and Constraints. This task will use the "environmental atlas" of land use, topography, hydrology, priority species and habitats, and other environmental resources, stressors, and water supply system infrastructure being developed for the Ecosystem Restoration Strategy project to identify opportunities and constraints. To attain the detailed hydrologic data necessary to design this pilot project, the project team will analyze both high- and low-flow conditions in all major canals and drainages within the Bypass. High-flow hydrology will be characterized by developing complete daily flow time series using 1968-1998 data for all major inflows (Sacramento Weir, Fremont Weir, Knights Landing Ridge Cut, Cache Creek, Willow Slough, Putah Creek, and Lisbon Weir); and supplementing gaged flow records as needed with flows estimated through correlation, operations rules, and mass balance. The project team will conduct a seasonal duration-frequency analysis of each flow source to determine the suitability of various water sources for meeting specific life stage requirements of target fish species and to reveal opportunities to use these existing flows to create artificial inundation along the toe drain. The low-flow analysis will entail identification of all Bypass channels accessible to fish and those used for irrigation and drainage operations, as well as quantification of the locations and rates of irrigation diversions (including wells, local diversions, and Sacramento River imports). This information will indicate any potential conflicts between localized inundation and irrigation supply operations in late spring, as well as opportunities for using existing drainages to convey water to supply the inundation project.

The project team will also analyze drainage patterns, water quality, water rights, and instream flow requirements. Topographic data will be compared to flood stages to identify inundation frequency and existing ponding locations, and these drainage patterns will be confirmed with existing aerial photographs and field observations. The project team will conduct a reconnaissance-level water quality screening analysis to identify any potential constraints related to fish habitat. Existing data from EPA, Regional Water Quality Control Board (RWQCB), City of Davis, City of Woodland, and local districts will be used to characterize the water quality in major inflows and drainage ditches. Finally, the project team will inventory instream flow requirements for water rights, water quality, and habitat in the lower Sacramento River between Fremont Weir and Rio Vista to identify potential constraints on routing part of the river flow through the Bypass under nonflood conditions.

Deliverable: A detailed existing condition and constraints analysis report.

Schedule: First quarter.

Task 4: Design and Implement an Adaptive Management Monitoring Program. The Strategic Plan and the Independent Scientific Review panel emphasized the need to establish measureable goals and to articulate explicit conceptual models and tested hypotheses in order to allow for adaptive management. This task encompasses:

- Refining the problem statement and goals to clarify the tangible ecosystem benefits of this pilot project, including contributions to ecological research, enhancing bypass habitat for aquatic species, and increasing productivity of the Bay-Delta food web;
- Developing a strategy and protocols for measuring progress toward these goals and objectives;
- Articulating conceptual ecological and physical models and framing tested hypotheses regarding the effect of conditions in the Bypass on key species and processes, including salmonids, Sacramento splittail, migratory water birds, and the Delta food web.
- Designing a monitoring study and obtaining peer review for pre- and postproject data collection and analysis.
- Collecting preproject baseline data.

Deliverables: A report clearly explaining measurable goals, restoration strategy and assumptions, conceptual models and hypotheses regarding key species; a peer reviewed monitoring plan; and publically accessible monitoring data.

Schedule: Data collection all quarters, reports second and third quarter.

Task 5: Alternatives Analyses and Design. The technical team will evaluate the full range of potential sites, water sources, and technologies available to achieve pilot project goals and eliminate several possible alternatives based on a preliminary screening criteria. Civil engineers will develop conceptual designs for various technologies and water sources at promising sites with willing public or private landowners, including different weir intake designs (e.g. gates, siphons) and channel configuration for water distribution. They will also examine potential toe drain weir designs such as flash boards, inflatable weirs, and radial gates. Finally, detailed topography and designs will be developed for two to three promising alternatives. Detailed hydraulic simulations will be conducted to discern the effect of alternatives on floodway conveyance, levee stability, and normal water operations. Results of the hydraulic model output will include maps of the extent of flooded areas, inundation depth, and flow velocity for the baseline and each alternative condition, including all discharge magnitude and frequencies analyzed. Additional engineering analyses may be conducted as part of an iterative process where model results are used to optimize the design of each alternative. For each of these final alternatives, the project team will evaluate fish and wildlife benefits, water quality impacts, water temperature, water right issues, organic carbon effects, and opportunities for information-rich experiments. The potential impacts on Delta circulation, SWP and CVP operations, and water quality (especially THM formation potential) of routing part of the Sacramento River flow through the Bypass under nonflood conditions will be evaluated by DWR using a version of DWRSIM that simulates flow and water quality.

Deliverable: Site-specific design and all the data and analysis necessary for permitting.

Schedule: Third and fourth quarters.

B. Project Location and Geographic Boundaries

The proposed project is located in Yolo County, California (Figure 1). The project is bounded by Fremont Weir in the north, the Bypass west levee to the west, the Sacramento River deep water ship channel to the east, and Liberty Island to the south. The affected area of the Delta Estuary potentially includes the north Delta (e.g., Cache Slough, Barker Slough); the central Delta (e.g., Georgiana Slough and lower Mokelumne River); south Delta (e.g., export facilities); and west Delta (e.g., Sherman Island).

IV. Ecological/Biological Benefits

A. Ecological/Biological Objectives

The primary objectives of this project are to:

- Optimize conditions for aquatic species in the Bypass consistent with existing Bypass uses,
- Test key hypothesis regarding the benefits and impacts of creating inundated floodplain habitat,
- Reduce stranding and improve passage for native fish that enter the Bypass, consistent with CALFED's targeted objectives,
- Develop design and management guidelines for inundated floodplain habitat for target species, and
- Improve conditions for migratory shorebirds and other water-dependent wildlife.

On average, the Bypass floods 1 in 3 years when Sacramento River flows exceed approximately 75,000 cubic feet per second (cfs), but it may not flood for many years at a time during extended dry periods. Our hypothesis is that *increasing the frequency and duration of seasonal inundation in dry and average hydrologic sequences will contribute substantially to the recovery of Sacramento splittail and other native fish species, including juvenile chinook salmon.* Conversely, prolonged periods without inundation of the Bypass could jeopardize the endangered splittail.

The Strategic Plan specifically prescribes creation of seasonally inundated floodplain habitat in the Bypass. Creation of floodplain habitat in the Bypass is significantly less expensive than alternative approaches such as levee setbacks or increased reservoir releases, and the physical configuration of the Bypass allows uniquely controlled restoration experiments. Restoration opportunities in other bypasses were considered, but the Bypass was selected because it affords easy access to adult splittail migrating from the Delta and recent evidence suggests that inundation of the region has benefits to many fish species and other organisms of the Estuary (Sommer et al. 1997; Schemel et al. 1996; DWR 1998a). These studies provide evidence that this project will:

- **Support Native Fish Populations.** The native fish fauna is adapted to flood cycles comparable to historical hydrology. Periodic inundation of the Yolo Bypass may provide native species with a "foothold" against exotic organisms in a heavily altered system. The Bypass appears to be particularly important spawning, rearing, and foraging habitat for the Sacramento splittail, a large native minnow recently listed as threatened (Sommer et al. 1997).

- **Increase Spawning Success.** Sommer et al. (1997) found that splittail abundance correlates strongly with the annual duration of flooding in the Yolo Bypass (Figure 2). Inundation of the Bypass in normal and dry years should help to improve spawning success for splittail and possibly other species. Figure 2 illustrates that splittail are one to two orders of magnitude more abundant when the bypass floods for an adequate duration.

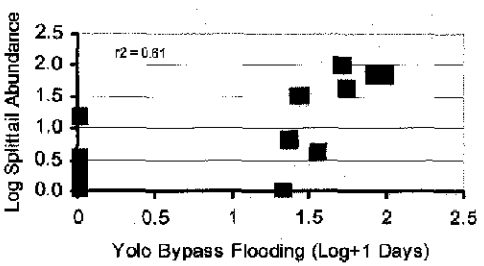

Figure 2

- **Benefit Multiple Species.** The Bypass provides habitat to at least 40 fish species, including three races of chinook salmon, steelhead trout, delta smelt, splittail, white sturgeon, and striped bass. Many other wildlife species of special concern, including migrating shorebirds and waterfowl, use the Bypass when it is shallowly flooded.

- **Improve Fish Growth and Survival.** Data from 1997 and 1998 strongly suggest that juvenile salmon grow faster in the Bypass floodplain than in the mainstem rivers due to warmer water temperatures and an abundant food supply (Figure 3). Initial results from 1998 studies also indicate that survival rates for salmon reared in the Bypass are higher than for individuals from the adjacent Sacramento River. Figure 3 illustrates that juvenile salmon that rear in the bypass grow up to twice as fast as those rearing in the Sacramento River.

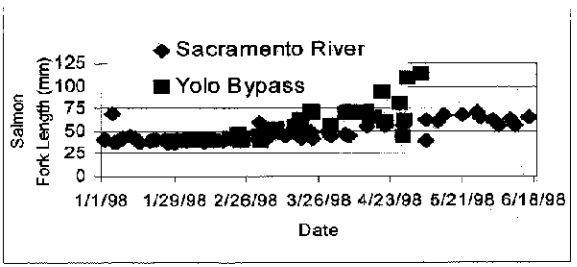

Figure 3

- **Reduce Stranding and Fish Passage Problems.** Both Fremont and Sacramento weirs are migration barriers for upstream migrating adult fish, and surveys from 1996-1999 show that fish stranding rates at the barriers are relatively high. Modification of one or both of these structures and improved drainage of isolated ponds could reduce juvenile stranding and improve adult fish passage.

- **Support Ecosystem Processes.** Seasonal inundation of floodplain areas was historically one of the major processes that supported the Bay-Delta ecosystem. However, construction of dams and levees has reduced the connectivity of floodplains with the rivers, particularly in dry years. Inundation of the Bypass in dry years would help to provide part of the functional equivalent of the historical hydrology. This hypothesis is consistent with results from a similar restoration project in the Kissimmee River (Florida), where the addition of three weirs to a channelized floodplain resulted in the reestablishment of native fish and vegetation communities.

- **Enhance Bay-Delta Food Web Productivity.** There is a growing recognition that the foodchain in the Sacramento-San Joaquin is supported largely by detritus. Studies by Jassby et al. (1993) indicate that most of the necessary organic material is generated from upstream areas. Moreover, Schemel et al. (1997) found that the Bypass is a primary source of organic carbon to the estuary. DWR sampling in 1998 and 1999 suggested that the Yolo Bypass was an important source of phytoplankton to the estuary.

B. Linkages

In 1998, CALFED awarded the Foundation a grant to fund a local stakeholder-driven Ecosystem Restoration Strategy for the Bypass within the framework of adaptive management described in Strategic Plan. New data demonstrating the ecological benefits of inundated floodplain habitat combined with the Strategic Plan's strong recommendation for restoration of this habitat in the Bypass, prompted this proposal as the next phase of the Ecosystem Restoration Strategy. It will be shaped by the stakeholder input from the Working Group as envisioned in the earlier Ecosystem Restoration Strategy proposal.

The Bypass currently serves important flood control functions and could provide numerous opportunities for ecosystem restoration. The Working Group will identify the opportunities which are mutually beneficial to both ecological and land use interests in the Bypass. To maintain these functions and opportunities, this project will be carefully designed as both flexible and reversible. Design flexibility will ensure that any modifications of Bypass infrastructure will be compatible with all land uses and foreseeable restoration opportunities in the

Bypass, as identified by the Working Group. Reversibility will ensure that the project can be easily and economically removed in the case that the project unexpectedly fails to provide intended ecosystem benefits or conflicts with flood control or other functions of the Bypass. These design principles will enable proponents to rapidly implement the project and expedite restoration benefits so that lessons learned from the monitoring program can be used to guide Stage II of the CALFED restoration program. In contrast, relatively permanent changes to the Bypass will be expensive and require years to obtain the necessary permits.

The Bypass was identified by staff of the Delta Protection Commission and Delta landowners as a good opportunity for locating restoration actions in the legally defined Delta. The project applicants will coordinate with the FWS to integrate the project with the North Delta Refuge that is being considered for the Bypass region. It will not intrude on the tidal marsh restoration opportunities in the South Delta but it will focus on the ecological benefits of fewer predators and increased primary production associated with seasonal inundation.

This project will address the following ERP objectives: natural floodplains and flood process inundation of floodplains with inundation frequencies of 1-5 years (p. 89); expand floodplains and bypasses (p. 90); Bay-Delta aquatic food web - increase estuarine productivity (p. 100); determine the limits on productivity, evaluate large-scale restoration of seasonal wetlands, generate hypotheses that might be effective at increasing productivity, and conduct pilot studies (p. 100); manage the Yolo and Sutter Bypasses as major areas of seasonal shallow water habitat (p. 103); restore the Sacramento splittail (p. 208); restore winter-, spring-, and late fall-run chinook salmon (pp. 220-222); stranding of adult and juvenile migratory fish species on bypass floodplains, specifically in the Bypass (p. 525); in addition, this project also addresses another of CALFED's current funding priorities—increasing fish passage in the Bypass.

C. System-Wide Ecosystem Benefits

As previously discussed, this project could significantly increase Delta food web productivity, Sacramento splittail populations, and juvenile salmon growth.

D. Compatibility with Non-Ecosystem Objectives

As previously stated, this project will be integrated with the Bypass Ecosystem Restoration Strategy previously supported by CALFED. The purpose of that project is to develop mutually beneficial alternatives that will improve ecosystem functions while not impacting water users in the Bypass, nor the integrity of the flood control system of the Bypass. All changes to water use and diversion will be designed with and approved by willing landowners and water users in the Bypass. No significant or competitive conjunctive water use should occur as a result of any preferred project alternatives.

The project can increase dissolved organic carbon in the water diverted from the North Bay Aqueduct (Aqueduct). However, this will only occur in winter months when diversions from the Aqueduct are lowest. Since most of the carbon flow from the project area to the Delta occurs in pulses, the operation of the project and the Aqueduct can be coordinated according to a real-time carbon monitoring program to prevent or mitigate any potential water quality impacts. The applicants view potential drinking water quality degradation at the Aqueduct as a serious issue and will make special efforts to design tools and methods to prevent water quality impacts.

V. Technical Feasibility and Timing

There are two major physical limitations to the inundation of floodplain in the Bypass in low flow years. First, water presently enters the Sacramento River via Fremont and Sacramento Weirs only when river stages are very high (e.g., Fremont Weir >33.5 feet). Second, the channel capacity of the toe drain on the east side of the Bypass appears to be relatively high. Approximately 5,000-10,000 cfs appears to be required before significant inundation of the adjacent floodplain occurs.

Project proponents will consider the full range of infrastructure and management options for seasonally flooding a portion of the Bypass with moderate flows. One potential approach entails modifying the Fremont or Sacramento Weir (or otherwise enhancing flows to the Bypass in dry years), as well as the conveyance capacity of the toe drain to enable managers to flood a small portion of the Bypass. One of the weirs will be modified to allow water to enter the Bypass during periods of moderate flow on the Sacramento River, and a removable weir will be installed in the toe drain, causing water surface elevations to increase and inundate the eastern half of the Yolo Basin Wetlands before flowing back into the downstream toe drain channel. Notches in the weir will be incorporated to improve upstream passage of adult fish.

With the willing collaboration of private landowners and responsible agencies, the modified weir and toe drain facilities can be operated to inundate the eastern part of the Yolo Basin for the benefit of endangered fish species if the Bypass has not been inundated for an extended period of time (e.g., 3-4 years). As an example of how the system can be operated, flooding will be initiated in late winter to benefit splittail, salmon, and other native fish species. A barrier will be installed in the toe drain and 1,000-2,000 cfs will be released through the Sacramento or Fremont Weir causing a small area (approximately 5,000 acres) to flood. Our hypothesis is that inundation of the Bypass will stimulate adult splittail and possibly other species to migrate up the toe drain in order to spawn on the floodplain. Juvenile salmon also will enter via the Sacramento or Fremont Weir to rear in the expanse of shallow water habitat in the Bypass. Based on 1998 study results, inundation of the Bypass should stimulate phytoplankton blooms and invertebrate production, benefitting organisms throughout the Bypass and larger Delta. The floodplain needs to be inundated for at least 30 days to allow for successful fish rearing and spawning. The barrier will then be removed, stimulating the young fish to migrate downstream to the estuary. Note that the barrier also will be removed if changing weather conditions resulted in flood operations in the Bypass.

Aside from monitoring permits already obtained by DWR, this phase of the project will not require additional permitting. Implementation of the project will require numerous environmental documents including an EIR/EIS under CEQA and NEPA; an encroachment permit from the state Reclamation Board; Sections 404 and 401 Clean Water Act permits; Section 1600 streambed alteration agreement under California Fish and Game Code; Section 7 biological assessment of incidental take under Environmental Species Act; and consultation with the SWRCB regarding water rights, with the ACOE regarding flood management, and with DFG regarding CESA.

VI. Monitoring and Data Collection Methodology

A. Biological/Ecological Objectives

- Improve rearing conditions for juvenile salmonids
- Expand and improve spawning conditions for Sacramento splittail
- Enhance Delta foodweb productivity
- Reduce stranding and improve passage of native fish
- Enhance spring staging habitat for shorebirds

Multiple conceptual models, hypotheses, and assumptions are embedded in each of the preceding goal statements. The project team believes that increasing the frequency and duration of flooded Bypass conditions will achieve all of the goals. In the monitoring program, the project team will articulate a more elaborate conceptual model related to each goal and frame specific testable hypothesis. The project will be specifically designed to test multiple hypothesis regarding optimal conditions for each of the species, guilds, or processes referred to in the preceding goal statements.

B. Monitoring Parameters and Data Collection Approach

Table 1 summarizes monitoring data that will be collected to design, evaluate, and adaptively manage new facilities that may be constructed in the Bypass. For the present phase of the project, monitoring will focus on preproject data. The major field protocols, sample frequency and duration, personnel, agency coordination, and locations are discussed in detail in DWR (1999), a peer-reviewed IEP study plan for Bypass sampling. All of the study components are considered "high priority." Zooplankton, larval fish, and drift samples will be collected monthly in dry years and biweekly in wet years using trawls at the base of the toe drain. Species composition and densities of young fish will be monitored in all water year types from a rotary screw trap installed in the Toe Drain of the Bypass. In wet years, beach seines will be used to monitor fish distribution, density, feeding success, and stranding at core sites established in 1997 and 1998. An adult fish monitoring program will be initiated with techniques such as fyke netting or gill netting. Algal monitoring will be based on chlorophyll results from continuous fluorometers, grab samples, and species counts. Water quality monitoring includes temperature, conductivity, sediment, organic carbon nutrient and contaminant sampling. Monitoring for upland wildlife species includes systematic counts of all raptors, both wintering and breeding; waterfowl counts; and shorebird counts, including weekly bird surveys in April and early May to determine species diversity and abundance.

C. Data Evaluation Approach

A key part of this phase of the project is initiation of a preproject monitoring program designed to produce data suitable for agency reports and peer-review scientific journals. Details on the sampling, preservation, and analytical techniques will follow DWR (1999), although additional protocols need to be developed for adult fish and phytoplankton. The data will be collected by DWR biologists in cooperation with USGS, San Francisco State University, and IEP. Monitoring will be posted on the IEP Web page. Detailed monthly salmon take reports will be prepared for DFG and other interested parties during January-June. A draft annual report will be completed by September of each year using a format and analytical approach similar to DWR (1998a). Project proposals and reports will be peer reviewed by the Yolo Bypass Project Work Team (Technical Team) and by other parties identified by the Management Committee. The study has been designed for the preparation of at least three to four scientific papers for peer-reviewed journals, including Transactions of the American Fisheries Society, Estuaries, Can. Journal of Fisheries and Aquatic Sciences and Regulated Rivers. As for the 1997 and 1998 Bypass studies, monitoring results will be presented at annual meetings of the IEP and other scientific organizations.

Table 1. Monitoring Data Collection Information

Hypothesis/Question to be Evaluated	Data Collection and Parameters (in parentheses)	Data Evaluation	Comments/Data Priority
Biological/Ecological Objectives			
1. Seasonal flooding of the Bypass will result in improved rearing conditions for juvenile salmonids.	Screw trap (density, growth, survival, residence time).	Present Phase Wet v. dry years, Bypass v. Sacramento River.	5-7 days/week.
	Beach seining (density, growth, distribution, habitat use).	Postconstruction Phase: As above including pre- v. postproject.	1-4 days/week (wet years and postconstruction phase only).
	Feeding success (ration size, temperature).	Upstream of project v. downstream of project.	1-2 days/month (wet years and postconstruction phase only).
2. Seasonal flooding of the Bypass will expand and improve spawning conditions for Sacramento splittail.	As above for screw trap and beach seine.	As above.	As above.
	Egg and larval tows (density, growth).		1-2 days/month.
	Fyke or gill-net surveys for adults (density, timing).		3-7 days/week.
3. Seasonal flooding of the Bypass will enhance Delta food web productivity.	Phytotplankton, fluorometry (density, flux).	As above.	Continuous.
	Zooplankton (density, flux).		1-2 days/month.
	Drift insects (density, flux).		1-2 days/month.
	Organic carbon (concentration, flux).		1-2 days/month.
4. Construction of project facilities will reduce stranding and improve passage of native fish.	As for No. 2.	As above.	As for No. 2.
	Stranding survey using seining (density, distribution).		Daily during events.
	Fyke or gill-net surveys for adults (density, timing, distribution)		3-7 days/week.

Table 1. Monitoring Data Collection Information—continued

Hypothesis/Question to be Evaluated	Data Collection and Parameters (in parentheses)	Data Evaluation	Comments/Data Priority
Biological/Ecological Objectives			
5. Seasonal flooding of the Bypass will enhance staging habitat for shorebirds.	Field counts.	Present phase: Wet v. dry years. Postconstruction phase: As above including pre- v. postproject, upstream of project v. downstream of project.	Weekly in April and early May.
6. Seasonal flooding of the Bypass will enhance habitat for upland species.	Field counts.	Present phase: Wet v. dry years. Postconstruction phase: As above including pre- v. postproject, upstream of project v. downstream of project.	Monthly counts.

VII. Local Involvement

The Foundation will take the lead in local involvement with the stakeholders who have an interest in the Bypass. Much of the local involvement will take the form of discussions with the Working Group. The make-up of the Working Group is described in Task 2, above. A public involvement plan developed by the Foundation with the project team will ensure that the local community has the opportunity to stay informed and participate in the development of restoration alternatives.

As the key local environmental organization in the Bypass region, the Foundation's connections through both its Board of Directors and its staff, as well as its proven record of successful restoration initiatives, has earned it the respect and support of local organizations representing a broad range of interest groups. The Foundation's Board of Directors represents a cross section of the stakeholder groups with an interest in the Bypass. This will prove key in the implementation of the Ecosystem Restoration Strategy for the Bypass. Board members play leadership roles throughout the Yolo Basin, the greater Putah-Cache Creek Watershed, and the Sacramento Region. Foundation board members and staff also have ties to other watershed groups with an interest in the tributaries to the Bypass, including Putah Creek Council, Cache Creek Conservancy, and the Yolo and Dixon Resource Conservation Districts.

As the representative of the local community on the project management team, Foundation will play a key role in development of project goals, testing of hypotheses, and design and selection of restoration alternatives. Foundation has established credibility within the Bypass community and among the many stakeholders that will help build a consensus design and selection of implementation projects. This is especially key in working with landowners that will be affected by implementation projects. Two adjacent landowners serve on the Board of the Foundation and the Foundation maintains good relations with other landowners, including DFG.

At the county level, we have notified Dave Rosenberg of the Yolo County Board of Supervisors and Skip Thomson of the Solano County Board of Supervisors of this proposal. Copies of those notification letters are attached.

Permission for property use or access is not applicable.

The project will be carefully designed with local stakeholders, landowners, and responsible agencies to avoid any third-party impacts. In particular, the project applicants will coordinate with flood management agencies, water suppliers, and local landowners to ensure that the project does not reduce flood protection, impair water quality, or infringe on agricultural use or private property rights.

VIII. Cost

A. Budget

Table 3-A in the next section is a summary budget. Table 3-B depicts a detailed budget for the entire project and each project collaborator. The extensive budget detail reflects the level of effort and thought that went into this proposal and is indicative of the project management and implementation skills of project collaborators.

Table 4 depicts a sample quarterly budget.

Overhead costs for all project staff are estimated to be less than 25% except for DWR that will charge its standard overhead rate of 48.6 percent.

B. Schedule

Table 3-A

• **Phase I: Baseline monitoring, alternatives analysis, and design**	1/2000	1/2001	**$819,233**
Task 1: Project Management	1/2000	1/2001	$45,269
Task 2: Public Outreach and Agency Coordination.	1/2000	1/2001	$90,207
Task 3: Inventory and Describe Existing Conditions.	1/2000	6/2000	$87,993
Task 4: Design and Implement an Adaptive Management Monitoring Program	1/2000	1/2001	$335,418
Task 5: Alternatives Analysis and Design	6/2000	1/2001	$260,345
• Phase II: Environmental compliance and permitting	1/2001	6/2001	$150,000
• Phase III: Construction and operation	6/2001	11/2001	$4,000,000

TABLE 3A: Detailed Budget 1of 6

	Direct Labor Hours	Direct Salary and Benefits	Service Contracts, Dollars	Material and Acquisition Contracts, Dollars	Misc. and Other Direct Costs, Dollars	Overhead and Indirect Costs, $	Total Cost $
Phase 1: Initiate Project and Establish Base Line							
1. Project management and oversight							
a. Develop detailed scope of services	120	7,213			498	2,109	9,820
b. management committee meetings	298	12,824			1,992	1,665	16,481
c. cost and quality oversight	250	8,316			448	1,904	10,668
d. review and finalize project deliverables, reporting	169	7,360			896	1,491	9,747
2. Public outreach and agency coordination							
a. Public outreach	484	27,335			3,912	5,510	36,757
b. Agency coordination meetings	412	23,330			2,475	5,091	30,896
d. Convene advisory committe	318	16,884			1,996	3,674	22,554
3. Inventory existing information, conditions, and constraints							
a. Collect and compile existing information	111	6,763			303	1,852	8,919
b. Develop GIS data base	300	11,966	3,000		400	2,992	18,358
c. map and desribe existing conditions	236	12,336	3,000		400	3,220	18,956
d. Identify primary constraints (legal, physical, and biological)	319	20,208			595	5,115	25,917
e. assemble existing conditions and constraints report	190	12,161			741	2,941	15,843
4. Design and Implement an Adaptive Management Monitoring Program							
a. Articulate problem statement, conceptual models, and hypothesis							
I. Splittail bypass utilization	32	1,802				518	2,320
II. salmonid bypass utilization	32	1,802				518	2,320
III. Shorebird utilization	46	2,846				780	3,626
Iv. Bypass effect on food web	28	1,503				444	1,947
b. Refine goals and objectives					200	0	200
i. Community participation and outreach objectives	16	869				251	1,120
ii. Restoration objectives	20	1,029				291	1,320
iii. Research objectives	20	1,029				291	1,320
iv. Assemble goals and objectives report	109	6,994			50	1,816	8,860
v. management and operations objectives	16	869				251	1,120
c. Monitoring study design, peer review, and baseline data collection					200	0	200
i. Design adaptive management monitoring program	108	1,440				700	2,140
ii. water quality: temperature, conductivity, sediment, organic carbon, contaminants	640	7,954	50,000	1,000		3,826	62,780
iii. plankton and algae sampling	740	15,018	2,500	1,000		5,592	24,110
iv. fish sampling	6,240	122,044	5,000	25,000		58,703	210,747
v. terestrial species surveys.	100	7,064					7,064
vi. Assemble monitoring plan report	56	1,989				633	2,622
i. peer review of monitoring plan	32	1,280				320	1,600
5. Alternatives analyses and design							
a. develop project/site criteria	167	10,960			1,127	2,426	14,513
b. screen broad range of alternatives	209	13,216			1,127	2,990	17,333
c. constraints analysis to further narrow range of selected alternatives	220	14,282			1,292	3,167	18,740
d. detailed design and analysis of final alternatives					500	332	832
I. toe drain surveys	8	659		10,000		165	10,824
ii. site specific detailded top map.	8	659		50,000		165	50,824
iii. Preliminary design	420	27,829			500	7,229	35,558
iv. engineering analysis and hyraulic simulations.	252	18,320				4,580	22,900
v. assess biological effects (conceptual)	56	4,453				1,249	5,702
vi. assess water quality effects (quantitative)	180	11,354				3,688	15,042
v. legal analysis: water rights, ESA, etc.	120	7,200				1,800	9,000
vii. Refine design: hydraulic, biological, operational, legal, and monitoring	196	13,554			500	3,389	17,443
e. cost estimates	128	8,320			100	2,216	10,636
f.Draft project recommendations report	354	23,945			1,462	5,591	30,999
PHASE 1 TOTAL	**13,758**	**496,978**	**63,500**	**87,000**	**21,714**	**151,487**	**820,679**

I-016538

TABLE 3A: YBF Sheet 2 of 6	Direct Labor Hours	Direct Salary and Benefits	Service Conract s, Dollars	Material and Acquisition Contracts, Dollars	Miscellaneous and Other Direct Costs, Dollars	Overhead and Indirect Costs, $	Total Cost $
Phase 1: Initiate Project and Establish Base Line							
1. Project management and oversight							0
a. Develop detailed scope of services	30	1,357			448	645	2,450
b. management committee meetings	148	6,808			1,792	161	8,761
c. cost and quality oversight	60	1,344			448	161	1,953
d. review and finalize project deliverables, reporting	59	2,688			896	323	3,907
2. Public outreach and agency coordination							
a. Public outreach	252	13,455			3,412	1,615	18,482
b. Agency coordination meetings	168	8,970			2,275	1,076	12,321
d. Convene advisory committe	140	7,475			1,896	897	10,268
3. Inventory existing information, conditions, and constraints							
a. Collect and compile existing information	7	326			103	39	469
b. Develop GIS data base	0	0			0		
c. map and describe existing conditions	0	0			0		
d. Identify primary constraints (legal, physical, and biological)	23	1,088			345	131	1,563
e. assemble existing conditions and constraints report	16	761			241	91	1,093
4. Design and Implement an Adaptive Management Monitoring Program							
a. Articulate problem statement, conceptual models, and hypothesis							
i. Splittail bypass utilization							
ii. salmonid bypass utilization							
iii. Shorebird utilization							
iv. Bypass effect on food web							
b. Refine goals and objectives							
i. Community participation and outreach objectives							
ii. Restoration objectives							
iii. Research objectives							
iv. Assemble goals and objectives report							
v. management and operations objectives							
c. Monitoring study design, peer review, and baseline data collection							
i. Design adaptive management monitoring program							
ii. water quality: temperature, conductivity, sediment, organic carbon, contaminants							
iii. plankton and algae sampling							
iv. fish sampling							
v. terestrial species surveys.							
vi. Assemble monitoring plan report							
i. peer review of monitoring plan							
5. Alternatives analyses and design							
a. develop project/site criteria	63	3,459			1,077	415	4,951
b. screen broad range of alternatives	63	3,459			1,077	415	4,951
c. constraints analysis to further narrow range of selected alternatives	76	4,151			1,292	498	5,941
d. detailed design and analysis of final alternatives						332	332
i. toe drain surveys							
ii. site specific detailded top map.							
iii. Preliminary design							
iv. engineering analysis and hyraulic simulations.							
v. assess biological effects (conceptual)							
vi. assess water quality effects (quantitative)							
v. legal analysis: water rights, ESA, etc.							
vii. Refine design: hydraulic, biological, operational, legal, and monitoring							
e. cost estimates							
f.Draft project recommendations report	50	2,768			862	161	3,791
YBF Phase 1 Total	**1,153**	**58,109**	**0**		**16,164**	**6,960**	**81,233**

I-016539

TABLE 3A: DWR Sub-Total Sheet 3 of 6	Direct Labor Hours	Direct Salary and Benefits	Service Contracts, Dollars	Material and Acquisition Contracts, Dollars	Miscellaneous and Other Direct Costs, Dollars	Overhead and Indirect Costs, $	Total Cost $
Phase 1: Initiate Project and Establish Base Line							
1. Project management and oversight							
a. Develop detailed scope of services							
b. management committee meetings							
c. cost and quality oversight							
d. review and finalize project deliverables, reporting							
2. Public outreach and agency coordination							
a. Public outreach	50	1,800				875	2,675
b. Agency coordination meetings	50	1,800				875	2,675
d. Convene advisory committe	50	1,800				875	2,675
3. Inventory existing information, conditions, and constraints							
a. Collect and compile existing information	24	864				420	1,284
b. Develop GIS data base							
c. map and desribe existing conditions	16	576				280	856
d. Identify primary constraints (legal, physical, and biological)	24	864				420	1,284
e. assemble existing conditions and constraints report							
4. Design and Implement an Adaptive Management Monitoring Program							
a. Articulate problem statement, conceptual models, and hypothesis							
i. Splittail bypass utilization	8	288				140	428
ii. salmonid bypass utilization	8	288				140	428
iii. Shorebird utilization	8	288				140	428
iv. Bypass effect on food web	8	288				140	428
b. Refine goals and objectives							0
i. Community participation and outreach objectives	4	144				70	214
ii. Restoration objectives	4	144				70	214
iii. Research objectives	4	144				70	214
iv. Assemble goals and objectives report	8	288				140	428
v. management and operations objectives	4	144				70	214
c. Monitoring study design, peer review, and baseline data collection							0
i. Design adaptive management monitoring program	40	1,440				700	2,140
iii. water quality: temperature, conductivity, sediment, organic carbon, contaminants	640	7,954	50,000	1,000		3,826	62,780
iv. plankton and algae sampling	640	7,954	2,500	1,000		3,826	15,280
v. fish sampling	6,240	122,044	5,000	25,000		58,703	210,747
vi. terestrial species surveys.							0
vii. Assemble monitoring plan report	16	576				280	856
i. peer review of monitoring plan							0
5. Alternatives analyses and design							0
a. develop project/site criteria	16	576				280	856
b. screen broad range of alternatives	16	576				280	856
c. constraints analysis to further narrow range of selected alternatives	16	576				280	856
d. detailed design and analysis of final alternatives							0
i. toe drain surveys			10,000				10,000
ii. site specific detailded top map.				50,000			50,000
iii. Preliminary design	32	1,152				560	1,712
iv. engineering analysis and hyraulic simulations.							0
v. assess biological effects (conceptual)	16	576				280	856
vi. assess water quality effects (quantitative)	100	3,600				1,750	5,350
v. legal analysis: water rights, ESA, etc.							0
vii. Refine design: hydraulic, biological, operational, legal, and monitoring							0
e. cost estimates	16	576				280	856
f. Draft project recommendations report	16	576				280	856
DWR Phase 1 Sub-Total	**8,074**	**157,896**	**67,500**	**77,000**	**0**	**76,050**	**378,446**

TABLE 3A: NHI-Sheet 4of 6

Phase 1: Initiate Project and Establish Base Line	Direct Labor Hours	Direct Salary and Benefits	Service Contracts, Dollars	Material and Acquisition Contracts, Dollars	ous and Other Direct Costs,	Overhead and Indirect Costs, $	Total Cost $
1. Project management and oversight							
a. Develop detailed scope of services	40	$1,600				$400	$2,000
b. management committee meetings	100	$4,000				$1,000	$5,000
c. cost and quality oversight	180	$6,300				$1,575	$7,875
d. review and finalize project deliverables, reporting	100	$4,000				$1,000	$5,000
2. Public outreach and agency coordination	0						
a. Public outreach	32	$1,280				$320	$1,600
b. Agency coordination meetings	64	$3,200				$800	$4,000
d. Convene advisory committe	48	$1,920				$480	$2,400
3. Inventory existing information, conditions, and constraints		$0					
a. Collect and compile existing information		$0					
b. Develop GIS data base	200	$5,000	3000			$1,250	$9,250
d. Identify primary constraints (legal, physical, and biological)	120	$7,200				$1,800	$9,000
e. assemble existing conditions and constraints report	24	$960				$240	$1,200
4. Design and Implement an Adaptive Management Monitoring Program		$0					
a. Articulate problem statement, conceptual models, and hypothesis		$0					
i. Splittail bypass utilization	8	$320				$80	$400
ii. salmonid bypass utilization	8	$320				$80	$400
iii. Shorebird utilization	8	$320				$80	$400
iv. Bypass effect on food web	8	$320				$80	$400
b. Refine goals and objectives		$0					
i. Community participation and outreach objectives	4	$160				$40	$200
ii. Restoration objectives	8	$320				$80	$400
iii. Research objectives	8	$320				$80	$400
iv. Assemble goals and objectives report	25	$1,000				$250	$1,250
v. management and operations objectives	4	$160				$40	$200
c. Monitoring study design, peer review, and baseline data collection							
i. Design adaptive management monitoring program	48						
ii. water quality: temperature, conductivity, sediment, organic carbon, contaminants							
iii. plankton and algae sampling							
iv. fish sampling							
v. terestrial species surveys.							
vi. Assemble monitoring plan report							
vii. Organize peer review of monitoring plan	32	$1,280				$320	$1,600
5. Alternatives analyses and design							
a. develop project/site criteria	8	$320				$80	$400
b. screen broad range of alternatives	30	$1,200				$300	$1,500
c. constraints analysis to further narrow range of selected alternatives	20	$800				$200	$1,000
d. detailed design and analysis of final alternatives							
i. toe drain surveys							
ii. site specific detailded top map.							
iii. Preliminary design							
iv. engineering analysis and hyraulic simulations.							
v. assess biological effects (conceptual)							
vi. assess water quality effects (quantitative)							
v. legal analysis: water rights, ESA, etc.	120	$7,200				$1,800	$9,000
vii. Refine design: hydraulic, biological, operational, legal, and monitoring	16	$960				$240	$1,200
e. cost estimates		$0				$0	
f.Draft project recommendations report	60	$2,400				$600	$3,000
NHI sub-total	**1,443**	**57,660**	**6,000**			**14,415**	**78,075**

I-016541

TABLE 3A: NHC Sub-Total Sheet 5 of 6	Direct Labor Hours	Direct Salary and Benefits	Service Contracts, Dollars	and Acquisition Contracts, Dollars	us and Other Direct Costs,	Overhead and Indirect Costs, $	Total Cost $
Phase 1: Initiate Project and Establish Base Line							
1. Project management and oversight							
a. Develop detailed scope of services	40	3,584			50	896	4,530
b. management committee meetings							
c. cost and quality oversight							
d. review and finalize project deliverables, reporting							
2. Public outreach and agency coordination							
a. Public outreach							
b. Agency coordination meetings							
d. Convene advisory committe							
3. Inventory existing information, conditions, and constraints							
a. Collect and compile existing information							
b. Develop GIS data base							
c. map and desribe existing conditions							
d. Identify primary constraints (legal, physical, and biological).	52	4,096			50	1,024	5,170
e. assemble existing conditions and constraints report							
4. Design and Implement an Adaptive Management Monitoring Program							
a. Articulate problem statement, conceptual models, and hypothesis							
i. Splittail bypass utilization							
ii. salmonid bypass utilization							
iii. Shorebird utilization							
iv. Bypass effect on food web							
b. Refine goals and objectives							
i. Community participation and outreach objectives							
ii. Restoration objectives							
iii. Research objectives							
iv. Assemble goals and objectives report	36	2,880			50	720	3,650
v. management and operations objectives							
c. Monitoring study design, peer review, and baseline data collection							
i. Design adaptive management monitoring program							
ii. water quality: temperature, conductivity, sediment, organic carbon, contaminants							
iii. plankton and algae sampling							
iv. fish sampling							
v. terestrial species surveys.							
vi. Assemble monitoring plan report							
i. peer review of monitoring plan							
5. Alternatives analyses and design							
a. develop project/site criteria	40	3,392			50	848	4,290
b. screen broad range of alternatives	60	4,768			50	1,192	6,010
c. constraints analysis to further narrow range of selected alternatives	48	3,936				984	4,920
d. detailed design and analysis of final alternatives	0	0				0	0
i. toe drain surveys	8	659				165	824
ii. site specific detailded top map.	8	659				165	824
iii. Preliminary design	348	22,800			500	5,700	29,000
iv. engineering analysis and hyraulic simulations	252	18,320				4,580	22,900
v. assess biological effects (conceptual)							
vi. assess water quality effects (quantitative)							
v. legal analysis: water rights, ESA, etc.							
vii. Refine design: hydraulic, biological, operational, legal, and monitoring	160	10,656			500	2,664	13,820
e. cost estimates	112	7,744			100	1,936	9,780
f.Draft project recommendations report	148	10,448			200	2,612	13,260
NHC Phase 1 Total	**1,312**	**93,942**			**1,550**	**23,796**	**119,288**

TABLE 3A: JSA Sub-totals Sheet 6 of 6	Direct Labor Hours	Direct Salary and Benefits	Service Contracts, Dollars	Material and Acquisition Contracts, Dollars	Miscellaneous and Other Direct Costs, Dollars	Overhead and Indirect Costs, $	Total Cost $
Phase 1: Initiate Project and Establish Base Line							
1. Project management and oversight							
a. Develop detailed scope of services	10	672				168	840
b. management committee meetings	50	2,016			200	504	2,720
c. cost and quality oversight	10	672				168	840
d. review and finalize project deliverables, reporting	10	672				168	840
2. Public outreach and agency coordination							
a. Public outreach	150	10,800			500	2,700	14,000
b. Agency coordination meetings	130	9,360			200	2,340	11,900
d. Convene advisory committe	80	5,689			100	1,422	7,211
3. Inventory existing information, conditions, and constraints		0				0	
a. Collect and compile existing information	80	5,573			200	1,393	7,166
b. Develop GIS data base	100	6,966			400	1,742	9,108
c. map and desribe existing conditions	100	6,960			400	1,740	9,100
d. Identify primary constraints (legal, pnysical, and biological)	100	6,960			200	1,740	8,900
e. assemble existing conditions and constraints report	150	10,440			500	2,610	13,550
4. Design and Implement an Adaptive Management Monitoring Program		0				0	
a. Articulate problem statement, conceptual models, and hypothesis		0				0	
i. Spittail bypass utilization	16	1,194				298	1,492
ii. salmonid bypass utilization	16	1,194				298	1,492
iii. Shorebird utilization	30	2,238				560	2,798
iv. Bypass effect on food web	12	895				224	1,119
b. Refine goals and objectives					200		
i. Community participation and outreach objectives	8	565				141	706
ii. Restoration objectives	8	565				141	706
iii. Research objectives	8	565				141	706
iv. Assemble goals and objectives report	40	2,826				706	3,532
v. management and operations objectives	8	565				141	706
c. Monitoring study design, peer review, and baseline data collection					200		
i. Design adaptive management monitoring program	20						
ii. water quality: temperature, conductivity, sediment, organic carbon, contaminants		0					
iii. plankton and algae sampling		7,064				1,766	8,830
iv. fish sampling		0					
v terestrial species surveys	100	7,064					7,064
vi. Assemble monitoring plan report	40	1,413				353	1,766
i. peer review of monitoring plan							
5. Alternatives analyses and design							
a. develop project/site criteria	40	3,212				803	4,015
b. screen broad range of alternatives	40	3,212				803	4,015
c. constraints analysis to further narrow range of selected alternatives	60	4,818				1,205	6,023
d. detailed design and analysis of final alternatives					500		
i. toe drain surveys		0					
ii. site specific detailded top map.		0					
iii. Preliminary design	40	3,877				969	4,846
iv. engineering analysis and hyraulic simulations		0					
v. assess biological effects (conceptual)	40	3,877				969	4,846
vi. assess water quality effects (quantitative)	80	7,754				1,938	9,692
v. legal analysis: water rights, ESA, etc.	0	0					
vii. Refine design: hydraulic, biological, operational, legal, and monitoring	20	1,938				485	2,423
e. cost estimates		0					
f.Draft project recommendations report	80	7,754			400	1,938	10,092
JSA PHASE 1 TOTAL	**1,596**	**125,339**			**1,596**	**125,339**	**157,807**

Table 4: Sample Quarterly Budget

Task #	Quarterly Budget Oct-Dec 1999	Quarterly Budget Jan-Mar 2000	Quarterly Budget April-June 2000	Quarterly Budget July-Sep 2000	Total
Task 1	22,552	22,552	22,552	22,552	45,269
Task 2	26,398	26,398	17,599	17,599	90,207
Task 3	43,997	43,997			87,993
Task 4	22,552	22,552	21,998	21,998	335,418
Task 5			130,173	130,173	260,345
Total	**115,498**	**115,498**	**192,321**	**192,321**	**820,679**

IX. Cost-Sharing

DWR project staff will request cost-sharing funds from IEP, who provided funds in 1997 ($30,000), 1998 ($40,000) and 1999 ($84,000) for Bypass monitoring and research. DWR project staff will be requesting approximately $100,000 from IEP for year 2000 field studies and data analysis. Results from these studies will be used for project design and monitoring.

X. Applicant Qualifications

The project will be jointly managed by a special private/public partnership comprised of the Foundation, DWR, and NHI. Other parties or agencies may be invited to serve on the management team as agreed on by existing team members. All decisions regarding project scope, budget, deliverables, and implementation of this project will be made by consensus, and no decisions under this partnership will be made without the consent of the Foundation which represents local stakeholders. NHI will serve as the fiscal agent and administor under the direction of the Management Committee. Jones & Stokes Associates and NHC will serve as contractors to the Management Committee. The Management Committee will be advised by the technical team and the Working Group. The technical team is a preexisting technical group coordinating research in the Bypass that will be augmented by specialists from Jones & Stokes Associates, NHC, and elsewhere as necessary at the direction of the Management Committee. The Working Group is a preexisting group of agency and private stakeholders coordinated by the Foundation to develop a general restoration and management strategy for the Bypass.

Yolo Basin Foundation

The Foundation was founded in 1990 as a community-based organization to support the establishment of the Yolo Bypass Wildlife Area. It is a nonprofit, public benefit corporation dedicated to educating and inspiring people about wetlands and wildlife of the Central Valley. The Board of Directors represents a diverse group of stakeholders, from agriculture and waterfowl conservation to local government and the business community. As project manager of the Ecosystem Restoration Strategy, Foundation's participation provides the key link needed to successfully move from strategy to implementation as envisioned in this proposal. **Robin Kulakow,** Executive Director of the Foundation, will serve on the Management Committee. Robin was a founding member of the Working Group in 1998, Yolo Basin Foundation, Putah Creek Council, and Cache Creek Conservancy. She has served as Executive Director of the Foundation since January 1991. She has extensive experience in managing consultant contracts for the Foundation.

Natural Heritage Institute

NHI is a nonprofit natural resources law and technical consulting firm committed to improving the management and conservation of natural resources with expertise in water management and habitat restoration. NHI has been a leading representative of the environmental community in the CALFED process. For the purposes of this project, NHI will serve as the fiscal agent and administrator of the project under the direction of the Management Committee. NHI will participate substantively by identifying biological constraints, developing project design, analyzing legal and institutional constraints posed by land and water rights and regulatory and permitting requirements, and coordinating statewide outreach to CALFED stakeholders.

Gregory A. Thomas, J.D., President of NHI, will serve on the project Management Committee. Much of his practice has addressed issues in the Bay-Delta region.

Peter Moyle, Ph.D., NHI Vice President and Trustee, will serve on the project Management Committee. He is a professor of fisheries biology at the University of California, Davis. He has developed conservation strategies for California's native fishes that have been applied in his work as Head of the Delta Native Fishes Recovery Team and as a member of the science team for the Sierra Nevada Ecosystem Project.

John Cain, M.L.A., a restoration ecologist, will help identify constraints and analyze project design. He specializes in river restoration and water resources management. He has a decade of experience in watershed and aquatic habitat restoration in California and is an expert on historical geomorphic and hydrologic changes to the San Joaquin river and their implications for fisheries restoration.

Department of Water Resources

Ted Sommer, Environmental Specialist IV with the DWR Environmental Services Office, will lead project monitoring studies and assist in project evaluation and design. Since 1996, he has been Principal Investigator for CALFED and IEP-funded projects to investigate how aquatic species use the Bypass and to identify floodplain restoration opportunities. Mr. Sommer's work on splittail (Sommer et al. 1997), juvenile chinook salmon (DWR 1998a) and the floodplain food chain (Sommer, unpublished data) provides much of the technical basis for the proposed project.

Jones & Stokes Associates

Dave Ceppos, Facilitation/Stakeholder Development Specialist and Natural Resources Planner, will be the project manager for Jones and Stokes Associates. He will design the public involvement and stakeholder development methodology, and will facilitate meetings. Mr. Ceppos will provide technical support on natural resource planning, and agricultural land use and impacts.

Steve Chainey, Senior Ecosystem Restoration Specialist, will assist with restoration planning and stakeholder discussions, and will support coordination with state and federal agencies, including ACOE. Mr. Chainey will hold the lead role in restoration design and stakeholder interaction on restoration issues.

Warren Shaul, Aquatic Habitat/Population Specialist, will work with stakeholders and the Foundation to assess aquatic habitat conditions, fish population conditions, and other related issues. He will be the lead designer of aquatic habitat improvement recommendations and will assist in hydologic assessment of the Bypass for aquatic and shaded riverine aquatic habitat.

Edward Beedy, Senior Waterfowl and Riparian Wildlife Specialist, will be responsible for technical information and will assist with all waterfowl and riparian-related technical presentations and documents, and general consultation with stakeholders.

Gus Yates, Senior Hydrologist, will conduct hydrologic assessment of the Bypass, specifically focusing on the directions, use, timing, and management of Bypass hydrology.

Northwest Hydraulic Consultants, Inc.

NHC is an internationally known engineering consulting company specializing in the areas of river engineering, hydraulics, sedimentation, fluvial geomorphology, flood control, surface water hydrology, and river, estuary, and wetland restoration design and assessment studies. NHC's specialized capabilities in river and wetland restoration is demonstrated by their past and present roles with DWR and the Foundation in Delta Island and shallow water habitat restoration projects, such as the Yolo Basin Wetlands, the Sherman Island Project, and engineering evaluations of fluvial hydraulic issues associated with the proposed Interim South Delta Project. NHC's services in these areas are complemented by state-of the art field assessment, mapping, and computer modeling capabilities and modern hydraulic modeling (physical modeling) facilities.

List of Attachments

Attachment A - Figure 1. Yolo Basin Project Area

Attachment B - Letters of Notification of Project Proposal

Attachment C - State Compliance Forms

Attachment D - Federal Compliance Forms

I-016548

ATTACHMENT A

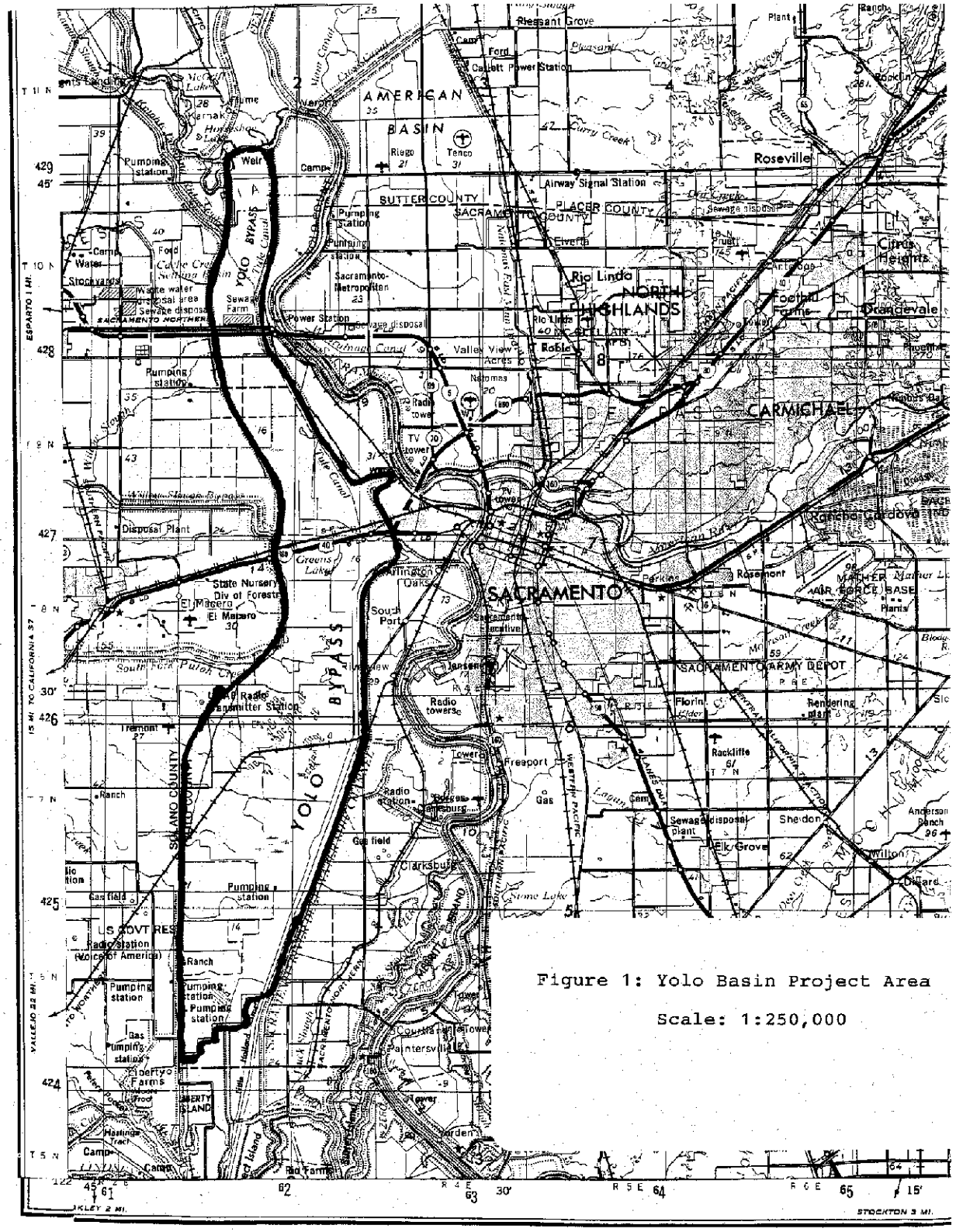

Figure 1: Yolo Basin Project Area

Scale: 1:250,000

ATTACHMENT B

Natural Heritage Institute

114 SANSOME STREET, SUITE 1200
SAN FRANCISCO, CA 94104
TEL: (415) 288-0550/FAX: (415)288-0555
e-mail: nhi@n-h-i.org

Non-Profit Law and Consulting in Conservation of Natural Resources and the Global Environment

April 14, 1999

Margit Aramburu
Executive Director
Delta Protection Commission
14215 River Road
P.O. Box 530
Walnut Grove, CA 95690

Dear Margit:

This letter is to notify the Delta Protection Commission that the Natural Heritage Institute (NHI), the Yolo Basin Foundation (YBF), and the California Department of Water Resources (DWR), are submitting an application to CALFED entitled *Inundation of a Section of the Yolo Bypass to Support Splittail and Other Aquatic Organisms in Dry Years*. The proposed project will build off of the technical studies and stakeholder involvement that will be conducted as part of YBF's *Ecosystem Restoration Strategy for the Yolo Bypass* funded by CALFED and set to begin in May. Attached is a copy of the executive summary from the proposal.

Please feel free to contact John Cain at NHI or Robin Kulakow at the Yolo Basin Foundation if you have any questions or concerns regarding this project, or if you would like a copy of the full proposal. We will keep you informed should the proposal be successful.

Sincerely,

Gregory A. Thomas
President

I —016552

I-016552

yolo basin foundation

P.O. Box 943
Davis, California
95617
530 756 7248

April 13, 1999

Dave Rosenberg
Supervisor
Yolo County Board of Supervisors
625 Court Street
Woodland, CA 95695

Dear Dave:

This letter is to notify the Board of Supervisors that the Yolo Basin Foundation with the Natural Heritage Institute and California Department of Water Resources is submitting an application to CALFED titled *Inundation of a section of the Yolo Bypass to support aquatic organisms in dry years*. The proposed project will build off of the technical studies and stakeholder involvement that will be conducted as part of the *Foundations' Ecosystem Restoration Strategy* for the Yolo Bypass funded by CALFED and set to begin in May. Attached is a copy of the proposal executive summary. Please let me know if you wish to see a copy of the full proposal.

The Foundation and the project team look forward to working with Yolo County and other local entities throughout development of the project. We will keep you informed of the progress of the proposal and when work will begin should the proposal be successful.

Sincerely,

Robin Kulakow
Executive Director

Cc: David Morrison, Yolo County Planning Department

I-016553

P.O. Box 943
Davis, California
95617
530 756 7248

April 13, 1999

Skip Thomson
Supervisor
Solano County Board of Supervisors
580 Texas St.
Fairfield, CA 94533

Dear Supervisor Thomson:

This letter is to notify the Board of Supervisors that the Yolo Basin Foundation with the Natural Heritage Institute and California Department of Water Resources is submitting an application to CALFED titled *Inundation of a section of the Yolo Bypass to support aquatic organisms in dry years*. The proposed project will build off of the technical studies and stakeholder involvement that will be conducted as part of the *Foundations' Ecosystem Restoration Strategy* for the Yolo Bypass funded by CALFED and set to begin in May. Attached is a copy of the proposal executive summary. Please let me know if you wish to see a copy of the full proposal.

The Foundation and the project team look forward to working with Solano County and other local entities throughout development of the project. We will keep you informed of the progress of the proposal and when work will begin should the proposal be successful.

Sincerely,

Robin Kulakow

Robin Kulakow
Executive Director

Cc: Solano County Planning Department

I-016554

ATTACHMENT C

OF CALIFORNIA

NONDISCRIMINATION COMPLIANCE STATEMENT

TD. 19 (REV. 3-98) FMC

COMPANY NAME

NATURAL HERITAGE INSTITUTE (NHI)

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME: GREGORY A. THOMAS

DATE EXECUTED: APRIL 15, 1999

EXECUTED IN THE COUNTY OF: SAN FRANCISCO

PROSPECTIVE CONTRACTOR'S SIGNATURE

PROSPECTIVE CONTRACTOR'S TITLE: PRESIDENT

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME: GREGORY A. THOMAS NATURAL HERITAGE INSTITUTE

I —016556

I-016556

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of CALIFORNIA

County of SAN FRANCISCO

On April 15, 1999 (Date) before me, Marc N. Bader, Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared Gregory A. Thomas (Name(s) of Signer(s))

☐ personally known to me – **OR** – ☑ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

MARC N. BADER
COMM. #1102314
Notary Public-California
SAN FRANCISCO
My Comm. Expires JUL. 29, 2000

WITNESS my hand and official seal.

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Nondiscrimination Compliance Statement

Document Date: 4-15-99 Number of Pages: one

Signer(s) Other Than Named Above: N/A

Capacity(ies) Claimed by Signer(s)

Signer's Name:	Signer's Name:
☐ Individual	☐ Individual
☐ Corporate Officer Title(s):	☐ Corporate Officer Title(s):
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Attorney-in-Fact	☐ Attorney-in-Fact
☐ Trustee	☐ Trustee
☐ Guardian or Conservator	☐ Guardian or Conservator
☐ Other:	☐ Other:
Signer Is Representing:	Signer Is Representing:
RIGHT THUMBPRINT OF SIGNER Top of thumb here	RIGHT THUMBPRINT OF SIGNER Top of thumb here

I –016557

I-016557

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

Agreement No. _____

Exhibit _____

STANDARD CLAUSES --
SMALL BUSINESS PREFERENCE AND CONTRACTOR IDENTIFICATION NUMBER

NOTICE TO ALL BIDDERS:

Section 14835, et. seq. of the California Government Code requires that a five percent preference be given to bidders who qualify as a small business. The rules and regulations of this law, including the definition of a small business for the delivery of service, are contained in Title 2, California Code of Regulations, Section 1896, et. seq. A copy of the regulations is available upon request. Questions regarding the preference approval process should be directed to the Office of Small and Minority Business at (916) 322-5060. To claim the small business preference, you must submit a copy of your certification approval letter with your bid.

Are you claiming preference as a small business?

_____ Yes* ___X___ No

*Attach a copy of your certification approval letter.

I —0 1 6 5 5 8

I-016558

ATTACHMENT D

U.S. Department of the Interior

Certifications Regarding Debarment, Suspension and Other Responsibility Matters, Drug-Free Workplace Requirements and Lobbying

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions - The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions. See below for language to be used; use this form for certification and sign; or use Department of the Interior Form 1954 (DI-1954). (See Appendix A of Subpart D of 43 CFR Part 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternate I. (Grantees Other Than Individuals) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR Part 12)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

CHECK ✓ IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE.

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

CHECK__ IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

DI-1910
March 1995
(This form consolidates DI-1953, DI-1954, DI-1955, DI-1956 and DI-1883

I —0 1 6 5 6 0

I-016560

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK ✓ IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.

Alternate I. (Grantees Other Than Individuals)

A. The grantee certifies that it will or continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about–
(1) The dangers of drug abuse in the workplace;
(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation, and employee assistance programs; and
(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will –
(1) Abide by the terms of the statement; and
(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;

(e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification numbers(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted –
(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a) (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

114 Sansome Street, Suite 1200

San Francisco, CA 94104 San Francisco county

Check___if there are workplaces on file that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK__IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternate II. (Grantees Who Are Individuals)

(a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;

(b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

I-016561

PART E: Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK ✓ IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS $100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT; SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

CHECK __ IF CERTIFICATION IS FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF $150,000, OR A SUBGRANT OR SUBCONTRACT EXCEEDING $100,000, UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL

TYPED NAME AND TITLE Gregory A. Thomas, President, NHI

DATE April 15, 1999

I —016562

APPLICATION FOR FEDERAL ASSISTANCE

OMB Approval No. 03

2. DATE SUBMITTED	Applicant Identifier
April 15, 1999	
3. DATE RECEIVED BY STATE	State Application Identifier
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

1. TYPE OF SUBMISSION:

Application: ☐ Construction ☒ Non-Construction

Preapplication: ☐ Construction ☐ Non-Construction

5. APPLICANT INFORMATION

Legal Name: Natural Heritage Institute

Organizational Unit:

Address *(give city, county, State, and zip code)*: 114 Sansome Street, Suite 1200, San Francisco, CA 94104 S.F. county

Name and telephone number of person to be contacted on matters involving this application *(give area code)*: John Cain (415) 288-0550

6. EMPLOYER IDENTIFICATION NUMBER *(EIN)*: 94-3099600

7. TYPE OF APPLICANT: *(enter appropriate letter in box)* N

A. State; B. County; C. Municipal; D. Township; E. Interstate; F. Intermunicipal; G. Special District; H. Independent School Dist.; I. State Controlled Institution of Higher Learning; J. Private University; K. Indian Tribe; L. Individual; M. Profit Organization; N. Other (Specify) non-profit organization

8. TYPE OF APPLICATION:

☒ New ☐ Continuation ☐ Revision

If Revision, enter appropriate letter(s) in box(es) ☐ ☐

A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other *(specify)*:

9. NAME OF FEDERAL AGENCY:

CALFED

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: ☐☐ – ☐☐☐

TITLE:

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:

Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail and Support a Suite of Other Anadromous and Native Species in Dry Years

12. AREAS AFFECTED BY PROJECT *(Cities, Counties, States, etc.)*:

Yolo and Solano counties

13. PROPOSED PROJECT		14. CONGRESSIONAL DISTRICTS OF:	
Start Date	Ending Date	a. Applicant	b. Project
1/2000	1/2001	District 8	District 5

15. ESTIMATED FUNDING:

a. Federal	$ 820,679 .00
b. Applicant NHI	$ .00
c. State	$ 100,000 .00
d. Local	$ .00
e. Other	$ .00
f. Program Income	$ .00
g. TOTAL	$ 920,679 .00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:

DATE _____

b. No. ☐ PROGRAM IS NOT COVERED BY E. O. 12372 ☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?

☐ Yes If "Yes," attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Type Name of Authorized Representative	b. Title	c. Telephone Number
Gregory A. Thomas	President	(415) 288-0550
d. Signature of Authorized Representative		e. Date Signed: April 15, 1999

Previous Edition Usable
Authorized for Local Reproduction

Standard Form 424 (Rev. 7-97)
Prescribed by OMB Circular A-102

I –016563

I-016563

OMB Approval No. 0348-0044

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		$	$	$	$	$
2.						
3.						
4.						
5. Totals		$	$	$	$	$

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
a. Personnel	$	$	$	$	$
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)					
j. Indirect Charges					
k. TOTALS (sum of 6i and 6j)	$	$	$	$	$
7. Program Income	$	$	$	$	$

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Prescribed by OMB Circular A-102

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SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8.	$	$	$	$
9.				
10.				
11.				
12. TOTAL (sum of lines 8 - 11)	$	$	$	$

SECTION D - FORCASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$	$	$	$	$
14. NonFederal					
15. TOTAL (sum of lines 13 and 14)					

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (Years) (b) First	(c) Second	(d) Third	(e) Fourth
16.	$	$	$	$
17.				
18.				
19.				
20. TOTAL (sum of lines 16-19)	$	$	$	$

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:	22. Indirect Charges:
23. Remarks:	

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OMB Approval No. 0[redacted]

ASSURANCES - NON-CONSTRUCTION PROGRAMS

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

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...ply, as applicable, with the provisions of the Davis-... Act (40 U.S.C. §§276a to 276a-7), the Copeland Act ...S.C. §276c and 18 U.S.C. §874), and the Contract ... Hours and Safety Standards Act (40 U.S.C. §§327-...), regarding labor standards for federally-assisted ...nstruction subagreements.

...Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§145... et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (Identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
	PRESIDENT
APPLICANT ORGANIZATION	DATE SUBMITTED
NATURAL HERITAGE INSTITUTE	APRIL 15, 1999

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